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# Some Verbal Behavior About Verbal Behavior

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Beginning with behavior analysts' tendency to characterize verbal behavior as "mere" verbal behavior, the author reviews his own attempt to employ it to influence both his staff and policies of our government. He then describes its role in psychopathology, its effect on speakers in healing themselves and on engendering creativity. The paper ends by calling to our attention the role of verbal behavior in the construction of behavior analysis.

*Key words:* verbal behavior, influence, creativity, healing effect of verbal behavior, conditioning verbal behavior, behavior analysis, policy, APA Science Directorate

"So what is it that you do?" It was an innocent enough question, and she asked it because she wanted to be helpful to me. She was not asking that question in a belligerent way. She did not imply that I was failing to earn my salary. After all, I had just hired her as my management supervisor in the directorate. Although, I must say the baldness of that question did stop me short. What did I do here? All I could think of was that I read an awful lot of e-mail—a little bit more informal than the memoranda one used to get and a little less stilted than those used to be because e-mail seems to occasion verbal behavior resembling talk as much as writing. I also write a large number of e-mails. I talk to my staff, both one at a time and sometimes to them all more formally at meetings. I write e-mails to members; I talk to members on the phone or in person, again sometimes one at a time and sometimes at meetings. I still write papers and sometimes get to read psychology articles and books. I talk and write to government officials. But let's admit it, it's all verbal behavior of one kind or another, and that makes it sound as if I were not doing anything of importance. Why is that?

There are two reasons for this: The first has to do with the attitude of society towards talk versus action. Talk is considered to be "cheap." As some wag said: "Talk is cheap because supply exceeds demand." Mae West also displayed her disdain of talk when she asked, "Are you a talker or a doer?"

The second reason has to do with the fact that we behavior analysts are the inheritors of the behaviorist tradition, which began because we were fed up with the talkers; we did not want to *describe* behaviors or even reinforcement contingencies; we wanted to specify contingencies and implement them. We wanted to achieve concrete behavioral change rather than make inferences about it. We did not want Socratic debates, we wanted to modify behavior. We knew that arguing would not achieve anything except to make for interesting cocktail conversation. Indeed, we characterized the achievements of psychoanalysis as a method for engaging in such interesting conversations. We rejected gaining a better understanding of ourselves by discussing why we were doing all these wrong things because we believed that such verbal behavior did not, in the final analysis, affect our "real" behavior, from which we almost always excluded verbal behavior. There were exceptions, of course, such as when we were inter-

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ested in reducing stuttering or when we were confronted by schizophrenic patients or young children who did not speak at all, but that was only because the problem was in the verbal behavior and not in its secondary effects. My associates and I (Portnoy & Salzinger, 1964; Salzinger & Pisoni, 1958, 1960, 1961; Salzinger, Portnoy, & Feldman, 1964) did a series of experiments on the conditioning of verbal affect statements of schizophrenic patients and normal control groups. We showed that such statements as "I love" or "I hate" or "I feel depressed," the verbal behavior from which diagnosticians would conclude the person was shallow in affect and therefore would warrant a schizophrenia diagnosis, could be made to appear to be shallow depending on the reinforcement contingency in effect. Although these studies gave rise to other perhaps more interesting findings, the research went along the familiar lines of showing that one cannot learn much about people by examining their verbal behavior rather than their "real" behavior.

What is interesting about all this, of course, is that Skinner, like Watson before him, always respected verbal behavior for what it is; indeed, he said on more than one occasion that his book on verbal behavior (Skinner, 1957) was his most important contribution. He created a fairly elaborate system of characterizing various classes of verbal behavior. Watson (1924) began his attack on psychology by pointing out that saying also is doing, that is, behaving. My point is that verbal behavior is what makes the world go around; it certainly has done that for my world at the American Psychological Association (APA). It serves as a behavior, as a discriminative stimulus and often as a reinforcer and as an establishing operation. It is really amazing when you think about the role of verbal behavior. We have entire buildings filled with men and women emitting verbal behavior, which ultimately can cause all kinds of injury and damage to people and property.

The president speaks to his secretary of state, who speaks to an assistant, who speaks to the next person in line. Eventually something gets committed to paper, and before you know it, a war is started or in better times one is stopped, at least temporarily. Yet we have been downplaying verbal behavior to a great extent ever since behavior analysis came to life, insisting that doing is more important than saying. I will "talk" about all of this, demonstrating how one can analyze this important behavior to good effect.

Let me start with a confession. One reason for the content of this paper is to use it as an opportunity to consider techniques of influence. As Executive Director for Science,[1] my answer to what I do on my job has to be, I emit verbal behavior both oral and written to influence people. Whom do I want to influence? On the one hand our members (both active and potential); on the other, government agencies, my staff, and the staff of other components of the APA, not to speak of my boss. When I do influence them, there is, of course, some ultimate nonverbal result such as more money for our members in the form of grants, better appreciation of what psychology has to offer and therefore greater use of behavioral principles by the public at large and by government agencies, lower dues when members join other scientific organizations as well as the APA, greater opportunities for their students, more journal space for articles, and so on.

Now let us examine the effectiveness of my verbal behavior in my job. I ask an administrative assistant (AA) to make up my expense report based on my receipts. By the way, abbreviations are rampant in Washington D.C. No new agency ever gets created without at the same time receiving some

[1] The American Psychological Association has four directorates, Education, Practice, Public Interest, and Science. I am the Director of the Science Directorate. It has a staff of approximately 20 people. Our basic purpose is to represent the interests of psychological science and psychological scientists.

lettered, strangulated abbreviation. It seems that psychology is plagued by the same malady. We ought not to allow abbreviation of any term to occur until and unless that term has occurred some minimal number of times in the literature. But let us return to my AA. She might respond to my mand, "Do you need this immediately?" and I respond "No, when you get a chance in the next couple of days." She might just take it and say, "okay." But most important, she will do it in a timely manner. In other words, I am most effective in controlling behavior when I talk to my staff, particularly secretaries. Why is that? Because I'm the one who fills out the personnel evaluation form which translates into positive conditioned reinforcers, otherwise referred to as checks, and those ultimately become money that can be used to buy food and fun. This reinforcement contingency is definitely molar rather than immediate, and typically is quite effective. I should also add that, of course, there is the immediate reinforcement of my verbal reinforcer of "thanks" or "thanks for taking care of this so quickly," all of which constitute stimuli presaging better paychecks, which are reinforcers closer to the primary ones of food, sex, and APA and ABA membership.

I also ask my professional staff to do things, such as writing statements for the National Science Foundation or the National Institute of Mental Health. I find full cooperation because those statements are often read by those staff members in a public arena. Under those circumstances, their verbal behavior is under the control of a number of reinforcement contingencies, going beyond what I can do, namely the negative reinforcement contingency of avoiding embarrassment of presenting a statement that does not make sense or at least that makes the listeners believe or say that it doesn't make sense.

On occasion, I can actually feel that I am impinging on somebody's nonverbal as well as verbal behavior; for example, when I get a chance to hire a new person, as I was able to do the other day. My verbal behavior at that time actually resulted in changing somebody's life, at least with respect to employment status and effecting smoother functioning of my directorate.

What else? Meeting with government officials after 9/11, I promulgated the notion that a critical response to terrorism must be behavioral and then provided the Science Adviser to the President with examples of principles that psychologists have discovered to be relevant to responding to terrorism. He in turn asked for additional examples, and my staff went right to work asking APA members to provide them; that is, they emitted verbal behavior on a number of listserves as well as directly to particular individuals known to be expert in this area. Those people produced examples for us, which we then passed on to the Office of Science and Technology. John Marburger, the Science Adviser to the President, recently talked about the importance of social science in responding to terrorism, and that becomes a discriminative stimulus for me to say that I had something to do with his expression of that view. It also constitutes a reinforcer for my continuing verbal behavior addressed to that office and by way of generalization to various other government offices.

What other means do I use to influence (I have long ago realized that despite our early use of the word "control," on good days, I "influence") behavior? Take for example my "op ed initiative." Here, I am interested in getting research psychologists to write opinion or editorial pieces for newspapers, bringing knowledge of the behavioral principles we have uncovered to the public at large. I pointed out to our members that newspapers all over the country would be pleased to receive well-written pieces, would actually pay for them, and would, in addition to displaying them to local areas, deposit them in a database regularly consulted by other members of the media. Those media persons in turn might

pick up the op ed piece and write an article of their own or present a television program on that subject. In other words, I described both a personal and public reinforcement contingency in an effort to get our members to emit particular classes of behavior. Now, how did I engage in my influence process? I wrote columns in both the *APA Monitor on Psychology* and the *Psychological Science Agenda* (the Science Directorate's newsletter that appears on the Science Directorate's Web site: www.apa.org/science); I visited with executive committees of the scientific divisions of the APA and talked about it to them; I continue to mention this initiative wherever I go and to whatever boards and committees and organizations I attend; I have also placed announcements of this effort prominently on the Web site. A number of people have written to me about the op ed columns. Some have asked for help in constructing them, which we do supply; some have told me that my column inspired them to write such a piece that they had had in mind for some time, and some actually sent me copies of their published columns. I have also placed some of the published columns on our Web site. I believe I have had some influence here, but somehow in my moments of extreme optimism, I had imagined a vast campaign of op eds all over the country with news reporters and television reporters clamoring to interview me about this vast effort. The latter has not happened, and I want to know why not.

Why am I surprised to find influencing people to be difficult? Advertisers seem to be incredibly successful—indeed, there are APA members who fear this influence so much that there is talk of outlawing commercials directed at children. A great deal of furor has been engendered by what seems to be the determination of elections by advertising, and various people have for years tried to control that sort of activity. Even in psychology itself, claims are made about successful influence (e.g., Sonner, 1998). For other influence, take, for example, the research by Loftus, Nucci, and Hoffman (1998), who have shown that people can be influenced to "remember" things that never happened by means of an interview or two. Ceci and Bruck (1995) investigated the phenomenon of suggestibility, that is, of remembering something that did not happen, in children. Suggestive interviews were in fact quite effective in evoking memories of things that had not happened. Clearly for behavior analysts the notion of memory is better restated as verbal behavior related to events that might have taken place in the past. The authors found, as we would put it, that the stimuli in the past were not always very strong, particularly in comparison to the contemporary stimuli of suggestive questions addressed to the children.

If that is not enough, consider the continuing evidence that is being collected to show that adults can be made to admit to having committed crimes that they did not commit (e.g., Brinded, 1998). Think about brainwashing, as we called it during the Korean and Vietnamese wars. Consider the influence that parents always worry about when they see their children consorting with undesirable friends.

On the other hand, think about the times you tried to get a waiter's attention to bring your food to you faster or hotter. Remember when you tried to get your class to read the chapter you were going to discuss, before that class; recall when you wished to get later or earlier classes than the ones the chair of your department insisted you must teach. Or recall when you just wanted to get the person who stood in your way to move aside so that you could leave the subway before they closed the door on you. For all our talk about controlling (or influencing) behavior, we really have quite a lot of trouble affecting other persons' behavior in the course of the day. And yet we seem content enough and live with the idea that we are in charge, that we do control things around us. What is the explanation for our feelings of hav-

ing control? I think it is, in part, that we manage to control our environment by surrounding ourselves with people whose behavior resembles ours. We are, therefore, often comforted by people whose behavior is controlled by the same factors that control our behavior. We spend a great deal of time with people whose reinforcement histories are very much like our own, and so our behaviors are generally congenial. In other words, we must remember that once we leave the protection of our laboratories, our insignificant reinforcers, our ineffective discriminative stimuli, our weak establishing operations—original or conditioned—do not do much for us in the face of other powerful countermanding reinforcement contingencies and histories that control the behavior of the people we are trying to influence. If we want to control or even just influence the behavior of others, we must do so by supplying appropriate reinforcers. We must somehow transcend behaviors that they are likely to emit to produce behavior incongruent with the environment currently in charge.

In those rare instances in which the repertoire to be instituted has no contrasting repertoire, we can occasionally use shaping procedures to produce the desired behavior, and we might be able to establish some verbal behavior of ours as discriminative stimuli or instructions. The hope of parents is to produce rule-governed behavior, but so is the hope of administrators who wish, with the rules that they establish, to control specific behaviors when only exemplars of the classes involved can be reinforced.

In other instances, we need to extinguish classes of behavior to establish verbal control over other people's behavior. Only then, when the interfering behavior has been eliminated or sufficiently diminished so as not to interfere with the behavior we are trying to instate, are we in a position to identify the reinforcers, that is, to find the stimuli that will be reinforcing for the behaviors we are trying to influence. Advertisers seek out those verbal response-produced discriminative stimuli, which in our culture exert some control. Some of their stimuli are well-known mands, such as "Go down to the store, now!" Many advertisers make use of modeling, that is, they present an example of the behavior that they want to instill in the viewer. Viewers have an extensive reinforcement history in which they learned to match their behavior to behavior viewed by them. When many people engage in a particular behavior, imitation is especially likely to be reinforced. This kind of advertising often helps the advertisers to increase their sales. But we must remember that the responses in question are often quite simple even if sometimes costly, as in the purchase of a car. What the advertisers do with their commercials involves a number of different processes.

They first rightly seek to get the viewer's attention. To some degree they do this by artificially raising the volume of what they say on the radio or television commercial; in some cases, this results in an avoidance response by the viewer, who finds the greater loudness to be aversive and turns the volume off completely. Sometimes they gain attention by presenting interesting content. In a recent example of drawing the audience's attention in an obvious way, the advertisers constructed a serial in which neighbors consisting of a man and a woman interacted over coffee. Even though each commercial was short, enough of a plot existed to make the viewer curious about the next episode. In both cases, the viewer attended to the message, which is the first prerequisite of influencing behavior.

When, as representatives of the APA, we speak to members of Congress, their assistants, or to any other government group, we often begin by pointing out not only our expertise but also our number of members (well over 150,000 of them). Our expertise is a discriminative stimulus for listening to our message because our verbal re-

sponse-produced stimuli are useful for them to solve problems. Government officials were interested when, to take but one example, I mentioned Holland's (1958) experiments on observing responses and their relevance to keeping luggage screeners' attention when the objects they are looking for are rare. Numbers of people are always important in Washington D.C. because those numbers can always turn into numbers of voters, either directly or indirectly, and those, of course, are real reinforcers either for the government people in question (such as members of Congress) or agency representatives appointed by those who depend on votes. The point is that expertise and number of members are attention-getting devices. Once we have their attention, we can suggest, or in rare cases, impose other reinforcement contingencies. The example that I gave above of speaking to the President's Science Adviser is one in which our expertise and number of members got us the opportunity to speak to the influential government person in the first place. Because everyone in government was looking for ideas on what to do about terrorism, an establishing operation was in effect as well. Now we must add to all of this that John Marburger was a university president before becoming Science Adviser to the President and thus is more aware of social sciences than other physicists or engineers might have been in the past. Thus, he had a repertoire that made the ideas that our group presented to him more familiar and possibly more influential. The fact was, as I pointed out, he asked for more examples of how behavioral principles can be used to aid in the fight against terrorism.

The ultimate test of our effectiveness, of course, is once again a question of how much nonverbal behavior will result from all of this. And our Public Policy Office personnel at the APA have been quite effective in speaking with various government people and in getting some of our expert psychologists appointed to important committees. For example, human factors psychologists have been increasingly involved in advising those who run our airports and airlines. Psychologists have studied so-called medical error (Lester & Tritter, 2001), and we have not hesitated to point that out to encourage various agencies to make use of our expertise in this area. How have we been able to effect these changes? By suggesting names of people, who when appointed, turned out to be useful to the committees and agencies that they joined. In behavioral terms, we can easily talk about the fact that when our advice was followed, their appointing behavior was reinforced.

Before leaving the topic of influencing the behavior of others, I want to talk a little about the influencing process involved in counseling and psychotherapy. After all, clinical psychology is very much a matter of altering people's behavior. I came across an interesting book titled *Motivational Interviewing* (Miller & Rollnick, 2002), which on examination turned out to be a description of how to get people to change. The authors talk in general terms suggesting that one "1. Express empathy. 2. Develop discrepancy. 3. Roll with resistance. 4. Support self-efficacy" (p. 36) and if you read on, you find that they say they use Carl Rogers' nondirective technique. Of course, what that means is that they reinforce speech, as was demonstrated by examination of the transcripts of Rogers' interviews by Truax (1966). Although they start off by advising one to be accepting, they also eventually advise that motivational interviewing is directive. But the point is that one can be accepting initially by simply reinforcing speech in general. We did that in some early experiments with schizophrenic patients and normal individuals (Salzinger et al., 1964). Then having established oneself as a source of positive reinforcement, one can begin to reinforce certain classes of verbal behavior. In motivational interviewing, it seems one has to identify

what are called discrepancies between what the client is now doing and what he or she wants to do. Having identified that discrepancy, one can then reinforce change, at least with respect to verbal behavior. They also caution against arguing with the client. Rather than doing that, they suggest asking questions that would allow the client to come up with the appropriate answer. In other words, they talk much about providing the client the opportunity of coming up with the idea of change. By emphasizing the need for the client to change, they suggest that one tell the client, although not so much in these exact words, if you wish to change, I can help you do that. In behavior-analytic language, this means present discriminative stimuli for change statements and then reinforce them as they occur. It is also interesting that while they talk about being nondirective, they list what they call "affirming change talk." Here are some of the examples of what I would call reinforcers that they provide: "That sounds like a good idea." "I can see how that would concern you." "I think that could work." "You're very considerate of how your actions affect other people." "That's a good point," and so on. What is interesting here is that although the authors do mention reinforcing change talk, they refer to Rogers, not Skinner, for the source of their ideas of changing their clients' behavior.

### *Effect of Verbal Behavior on the Speaker*

So much for the effect of verbal reinforcement on the verbal behavior of others. What is the effect of verbal behavior on our own, that is, the speaker's behavior? "Why are depressed people depressed?" cognitive psychologists ask, and they answer, "Because they have thoughts that make them depressed." Depressed people put themselves down; they express no hope; they believe they cannot do things, which in fact they could; they are pessimistic. "Why are phobic people fearful?" "Because they have thoughts that make them anticipate terrible things." Of course, it is not clear whether these thoughts are simply part of the relevant repertoire that makes clinicians call these people depressed or fearful, whether their pathological state is what evokes the verbal responses, or whether these verbal responses are simply dependent on other variables such as the people around them who reinforce such verbal repertoires. This is an old controversy by this time, but one of my graduate students (Rose, 2000) did a dissertation that is relevant. We decided that if thoughts are so critical in generating and explaining fear, we ought to be able to demonstrate their presence when subjects were fearful. We selected speech-anxious subjects for our study. We put them in a situation that made them fearful by asking them to look into a television camera as we set up an audience, and we had them talk about "what it is like for them to speak in front of others." We then analyzed the content of their speech. We found few evaluative, or threat, statements and few anticipatory anxiety statements. And we found no difference in the number of such statements between those who were speech anxious and those who were not. Speech-anxious individuals did not discuss impending feelings of humiliation or failing at their speaking task, which is supposed to be characteristic of these individuals. The point is that when tested, the evidence for causal effects of verbal behavior on fear behavior is scant indeed.

But what about such theories as Hayes' experiential avoidance? He maintains (Hayes, Strosahl, & Wilson, 1999) that the private events not only do not cause the problems from which people suffer, but that trying to control those private events is counterproductive and may "breed human misery" (p. 56). Here is the problem of verbal behavior and its behavior–behavior control causing mischief. Other investigators have suggested (Wegner, 1997)

that deliberately trying to suppress one's thinking about, say, a white bear or about not smoking or not drinking conjures up thoughts of the white bear, cigarettes, or drinking. Wegner calls this his ironic process theory, according to which he posits two contradictory processes: an intentional operating process, such as deliberately thinking of some distraction, and an ironic monitoring process that is unconscious. The latter, in monitoring whether the person is doing the right thing, looks for the very thought that the person is trying to escape. The point is that it is very difficult, if not impossible, to deliberately decide not to do something without thinking about that very thing. In terms of the way a behavior analyst wants to view this problem, what we have is strong verbal-response-produced stimulus control over other verbal behavior. Somebody who drinks or smokes often will undoubtedly have in his or her repertoire strong verbal responses related to problem drinking or smoking. We cannot get away from the phenomenon of response-produced stimulus control.

Hayes et al. (1999) talk of an interesting and familiar phenomenon in which, when we describe some aversive event we lived through, we become emotional in response to our description, as we did to the event itself. He also maintains that we avoid talking about and thinking about the event because of its aversiveness. Our verbal-response-produced stimuli also have become conditioned emotional stimuli, à la Pavlov, although Hayes et al. invoke derived stimulus relations and stimulus equivalence to explain this process. Finally, they say that one of the important aspects of any successful therapy is to stop the patient's attempts to avoid talking and thinking about the aversive event. They call that experiential avoidance and again we are facing the ironic process. Patients, according to Hayes et al., suffer from expending too much energy on the task of *not* thinking of aversive events; he explains the experiential avoidance by citing evidence of bidirectionality between aversive events and the person's verbal behavior describing it or even thinking of it. Because the latter has become aversive, avoidance is natural even though the stimuli engendered are response produced.

Furthermore, avoidance is also rule governed, with society encouraging avoidance by directing people, beginning when they are children, to stop thinking about aversive events. As if that were not enough, those afflicted explain their troublesome behavior by saying that it is caused by troublesome feelings, and they are aided and abetted by some therapists, behavior therapists sometimes included (as I have already explained). For example, not leaving the house is justified by saying, "I did not go to the party because I was depressed or afraid." Hayes et al. (1999) suggest that one needs to get the patient to learn to say, "I did not go to the party *and* I was depressed or afraid." His point is that the former locution makes both patients and some therapists concentrate on modifying the private event of depression or fear, a modification that cannot be easily, if at all, accomplished and that assumes in any case that it is the private event that causes the maladaptive behavior. As behavior analysts, we reject this notion that one behavior is the cause of another behavior. And yet, it is not all that simple. We do alter our own behavior in a variety of ways; whether the original cause resides in the environment or not is less important than finding out how our serial emission of verbal responses somehow results in "new" responses, in the sense that they were not originally under the control of the external event in question. I will talk about a number of such phenomena next.

### *The Healing Effect of Verbal Behavior*

We all know the old claim made by Freud (Brill, 1938) about abreactions and catharsis. It essentially says that

some hidden or repressed desire has produced pressure that can be dealt with only through release by talking about or admitting the desire. Indeed, this has come to be called the talking cure. Once the patient has gone through the experience of talking about the problem, he or she will feel better, this theory says. This is a very old interpretation of the effect of expressive verbal behavior, but it has more recently been studied in a more objective and controlled way (Pennebaker, 1989) and is supported by different theories. The technique is quite simple. Subjects are asked to write for about 20 minutes each day for several days on their "deepest thoughts and feelings related to a stressful event" (Lepore & Smyth, 2002, p. 4). It is important to note that there is no requirement for the material to be seen by anyone besides the writer. This is truly where the speaker (writer) is the only listener (reader). The reported effects are manifold as well as surprising. Studies have shown improvement in lung functioning in asthma patients, reduced symptoms in rheumatoid patients, reduction of emotional and physical health complaints, and enhanced social functioning, to give but a few (Lepore & Smyth, p. 4). It seems like a very interesting phenomenon to analyze as an example of what miracle verbal behavior has wrought with this technique. It also sounds very practical. If all it took to deal with your physical and behavioral problems was to write about them a few times, we could dispense with much of the health field and maybe Medicare and the whole pharmaceutical industry. I'm just dreaming.

But what are the mechanisms posited for the effects? The first, true to its beginning, is that "inhibition of thoughts, feelings, and behavior requires physiological work" (Lepore & Smyth, 2002, p. 9). That work is assumed to undermine the person's ability to adapt, and thus produces or increases health problems. With that theory then the idea is that expressive writing disinhibits thoughts, feelings, and behaviors with the result of better health. Other theories talk of habituation or exposure therapy. Still another theory is called cognitive restructuring. Pennebaker (1989) did content analysis of the written protocols and found that the use of certain words such as *understand, know,* and *realize,* or at another time that words about *cause and effect,* correlated with improvement in health outcomes. There appears to be evidence also that the writing on successive days changes, in that the story that the subject writes becomes "more coherent." This is an area rife for searching for a relation between what people say to themselves and how it affects them.

One interesting study examined working memory and its relation to feelings of stress and response to the expressive writing intervention. More stress was related to poorer functioning in a working memory task. The interpretation (Klein, 2002) was that stress has an effect on cognitive activity as well as on the physiological system. Essentially, working memory experiments require the subjects to engage in more than one task at a time, and they perform worse when they are under stress than when they are not. Furthermore, writing about a negative event that happened to the subjects improved their performance on such a task, and, what is perhaps more important, subsequently reduced the number of unwanted thoughts (intrusions) for those subjects who did the writing task.

How do we interpret these results? Writing about stress first allows, as already suggested, extinction of the verbal behavior of grief to take place. The question is what happens when we write about some aversive event. Hayes et al. (1999) explain that through the mechanism of derived stimulus relations, we respond to the description of the aversive event in the same or almost the same emotional way as to the original event being described. Second, by writing about one's problems, it may well become clear that the problem is not as bad as it

seems when one is simply ruminating. That is, by thinking more systematically while writing, one might note that the day was not all bad; some nice things also happened. These "nice" things then might elicit positive emotions in the way that Wolpe (1958) conceived desensitization to work. Third, writing about a problem might also prompt a solution to at least some aspect of the problem that the stressed person has to deal with. That suggests that in the process of emitting relevant verbal behavior, its response-produced stimulation evokes a greater variety of responses, some of which may begin to deal with the problem in a constructive or even creative manner. To the extent that some means are developed to deal with the problem, one should not be surprised that subjects would feel better afterwards.

### *Creativity: More Behavior–Behavior Effects*

Note that my interpretation at the end of the previous section was that the subjects "developed" some means of dealing with aspects of the problem. What do I mean by "developed"? What I mean is that as we speak or write or otherwise emit verbal behavior at a relatively high rate, the very words that we emit become discriminative stimuli for other verbal responses. And these other responses are at least sometimes original, by which I mean that the person had not emitted them before engaging in this task. James (1892) described spontaneous association as opposed to voluntary trains of thought in a rather colorful way: "The train of imagery wanders at its own sweet will, now trudging in sober grooves of habit, now with a hop, skip, and jump darting across the whole field of time and space" (p. 138). It certainly feels the way James described this process, at least in good times, when we think of new ideas, some of which seem at least somewhat worthwhile. We are talking about still another example of how response-produced stimulation, acting as a discriminative stimulus, produces responses that did not occur before that particular series of verbal responses was emitted. I do not believe it is useful to quarrel about where the cause lies for those "new" responses. The new responses undoubtedly were a function of the context, that is, the environment as well as the response-produced stimuli. To better understand creativity, we ought to study what minor alteration in the environment or consequent alteration in response-produced stimuli is responsible for the ultimate verbal response without worrying about where the independent variable inheres. There's the environment again as the independent variable, but it works as such because of what it evokes from our verbal behavior producing more verbal behavior.

### *Verbal Behavior of Behavior Analysis*

Of course, if we are discussing how verbal behavior evokes creative verbal behavior, we must consider the verbal behavior of our science. I spoke about some of this in a recent paper (Salzinger, 1999): I took up the problem of the use of lay terms for categories of study. I admitted that sometimes lay terms can be translated without too much difficulty into scientific concepts that have the advantage of objectivity, reliability, and precision of description. More often than not, however, we find that lay categories describe behavior in terms that do not correspond to empirically derived categories of behavior. They do so partially and, in that way, they result in misleading us. In a recent attempt to discuss this problem with respect to the concept of anger (Salzinger, 1995), I noticed that Spielberger and Sydeman (1994) found some items from the trait version of Spielberger's anger scale to correlate better with his famous anxiety scale than with his anger scale. Perhaps what we need is not concepts of anger and anxiety but a concept of "angiety." The point is that the mixing of emotions happens often,

as when some clinicians contrast "anger out" as opposed to "anger in" to describe still another emotion, namely depression. Should we perhaps substitute for all of this some category of intensity of behavior, going from aggression at one extreme all the way down to depression at the other? We desperately need to be aware of alternative categories, especially when we find ourselves hedging and twisting and patching up the categories that we inherit from our lay environment.

We should add that when we speak of lay language, we are talking of lay language of a particular period and in a particular area of the world. Danziger (1997) reminds us of both kinds of effects. Thus terms or categories like *passion, will,* and *reason* are no longer very popular in the psychology of today, neither in our lay language nor in our scientific reports in psychology. But at the height of their popularity, they no doubt seemed quite natural. Danziger relates a personal experience of teaching in Indonesia. An Indonesian colleague and he were both teaching psychology and discussed splitting the term's teaching. But they discovered that they had each categorized the field in such different ways that they were unable to share the teaching. Danziger also cites I. A. Richards, who found that the Chinese philosopher Meng Tzu used a term meaning both feeling and propensity, clearly not a category that we recognize. And that, of course, is exactly my point. We can categorize behaviors in a great variety of ways, and we ought to study those categories or perhaps simply vary them sufficiently to give new discoveries in psychology a chance to occur. Behavior analysis also uses classes of analysis that are at variance with those used by other parts of psychology, as well as by current laypeople.

Hineline (e.g., 1992) has often spoken of this discrepancy. Whereas, our society speaks of person–behavior relations, and he cites Descartes' "I think, therefore I am" as an outstanding example of the direction of causality to explain why we behave in particular ways, behavior analysts speak of environment–behavior relations, explaining our behavior in terms of variation in the environment. In any case, once again, we speak of our language as the cause of problems, in this case, the problem of having our particular approach rejected by the rest of psychology.

I would like to talk about another effect of behavior-analytic language. It is one that I always knew about, namely its disciplinary character. Indeed, back in the 1950s when I first learned about behavior analysis (what we then called behavior theory), we were quite obnoxious about it all. There were certain words that we were not permitted to use; there were certain concepts that we rejected outright, and these were words and concepts that we refused to permit colleagues to use when they spoke to us. *Mind* was a four-letter word, both literally and figuratively, and it was definitely one of those words and concepts to be eschewed. The other day when I spoke to a well-known psychophysicist, she confided in me as being relieved that she could at last speak freely and not have to adhere to those behavioristic restrictions. I do believe that we have come a long way from rejecting the use of words like *mind* when we are talking with colleagues, especially those of cognitive persuasion. As long as we eventually do talk of behavior under various environmental conditions and as long as we do pay attention to response-produced stimuli, no harm will be done. Indeed, we will gain a lot by being able to converse with psychologists who use a different theory to explain behavior than we do. If they present data, then we should look at it and try to figure out what it means in terms of our way of conceptualizing behavior.

### *Conclusion*

In sum then, we started with the fact that we, like the rest of society, generally belittle verbal behavior and that we do so despite the fact that verbal behavior is the behavior we are most

likely to engage in. We went on to consider how verbal behavior is focused on controlling other people's behavior. Next, we discussed the ways in which verbal behavior affects the person emitting it. Here, we first described the role that is attributed to verbal behavior in producing psychopathology; then we talked about the healing effect of verbal behavior on the speaker or writer; we then went on to describe the role of verbal behavior in creativity. Finally, we briefly discussed the role of verbal behavior in the construction of behavior analysis.

Verbal behavior is ubiquitous. It is everywhere, not only in our lives but in our science. When we say we should study verbal behavior to a greater degree, we must study it not only in and of itself but also in the many areas in which it plays a central role.

## REFERENCES


Brill, A. A. (Ed.). (1938). *The basic writings of Sigmund Freud.* New York: The Modern Library.

Brinded, P. M. (1998). A case of acquittal following confession in a police videotaped interview. *Psychiatry, Psychology & Law, 5,* 133–138.

Ceci, S. J., & Bruck, M. (1995). *Jeopardy in the courtroom: A scientific analysis of children's testimony.* Washington, DC: American Psychological Association.

Danziger, K. (1997). *Naming the mind.* London: Sage.

Hayes, S. C., Strosahl, K. D., & Wilson, K. G. (1999). *Acceptance and commitment therapy.* New York: Guilford.

Hineline, P. (1992). A self-interpretive behavior analysis. *American Psychologist, 47,* 1274–1286.

Holland, J. G. (1958). Human vigilance. *Science, 128,* 61–67.

James, W. (1892). *Psychology: The briefer course.* New York: Henry Holt.

Klein, K. (2002). Stress, expressive writing, and working memory. In S. J. Lepore & J. M. Smyth (Eds.), *The writing cure* (pp. 135–155). Washington, DC: American Psychological Association.

Lepore, S. J., & Smyth, J. M. (Eds.). (2002). *The writing cure.* Washington, DC: American Psychological Association.

Lester, H., & Tritter, J. Q. (2001). Medical error: A discussion of the medical construction of error and suggestions for reforms of medical education to decrease error. *Medical Education, 35,* 855–861.

Loftus, E. F., Nucci, M., & Hoffman, H. (1998). Manufacturing memory. *American Journal of Forensic Psychology, 16,* 63–75.

Miller, W., & Rollnick, S. (2002). *Motivational interviewing.* New York: Guilford.

Pennebaker, J. W. (1989). Confession, inhibition, and disease. In L. Berkowitz (Ed.), *Advances in experimental social psychology* (Vol. 22, pp. 211–244). San Diego, CA: Academic Press.

Portnoy, S., & Salzinger, K. (1964). The conditionability of different verbal response classes: Positive, negative, and non-affect statements. *Journal of General Psychology, 70,* 311–323.

Rose, R. (2000). *Speech anxiety and covert verbal behavior.* Unpublished doctoral dissertation, Hofstra University, New York.

Salzinger, K. (1995). A behavior-analytic view of anger and aggression. In H. Kassinove (Ed.), *Anger disorders: Definition, diagnosis, and treatment* (pp. 69–79). Bristol, PA: Taylor & Francis.

Salzinger, K. (1999). Words, words, words: The psychologist's dilemma. *The General Psychologist, 34,* 17–21.

Salzinger, K., & Pisoni, S. (1958). Reinforcement of affect responses of schizophrenics during the clinical interview. *Journal of Abnormal and Social Psychology, 57,* 84–90.

Salzinger, K., & Pisoni, S. (1960). Reinforcement of verbal affect responses of normal subjects during the interview. *Journal of Abnormal and Social Psychology, 60,* 127–130.

Salzinger, K., & Pisoni, S. (1961). Some parameters of the conditioning of verbal affect responses in schizophrenic subjects. *Journal of Abnormal and Social Psychology, 63,* 511–516.

Salzinger, K., Portnoy, S., & Feldman, R. S. (1964). Experimental manipulation of continuous speech in schizophrenic patients. *Journal of Abnormal and Social Psychology, 68,* 508–516.

Skinner, B. F. (1957). *Verbal behavior.* New York: Appleton-Century-Crofts.

Sonner, B. S. (1998). The effectiveness of negative political advertising: A case study. *Journal of Advertising Research, 38,* 37–42.

Spielberger, C. D., & Sydeman, S. J. (1994). State-trait anxiety inventory and state-trait anger expression inventory. In M. E. Maruish (Ed.), *The use of psychological tests for treatment planning and outcome assessment* (pp. 292–321). Hillsdale, NJ: Erlbaum.

Truax, C. B. (1966). Reinforcement and nonreinforcement in Rogerian psychotherapy. *Journal of Abnormal Psychology, 71,* 1–9.

Watson, J. B. (1924). *Behaviorism.* New York: W. W. Norton.

Wegner, D. M. (1997). When the antidote is the poison: Ironic mental control processes. *Psychological Science, 8,* 148–150.

Wolpe, J. (1958). *Psychotherapy by reciprocal inhibition.* Stanford, CA: Stanford University Press.